

## AMENDMENTS TO THE CLAIMS

1. (CURRENTLY AMENDED) A method for decoding a bitstream comprising the steps of:

(A) receiving a first encoded bitstream at an input of a pre-decoder, wherein said first encoded bitstream is an intra-only frame picture encoded bitstream comprising a frame header and alternating macroblock rows, with each macroblock row containing encoded data for a plurality of vertical lines from a single respective field of a frame picture encoded in said first encoded bitstream;

(B) generating in said pre-decoder a first field header and a second field header ~~in response to~~ using said frame header of said first encoded bitstream, wherein said first field header comprises a copy of said frame header modified to signal a first field picture and said second field header comprises a copy of said frame header modified to signal a second field picture;

(C) storing said first field header and macroblock rows containing the encoded data for the plurality of vertical lines from a first field of the frame picture in a first buffer in said pre-decoder and storing said second field header and macroblock rows containing the encoded data for the plurality of vertical lines from a second field of the frame picture in a second buffer in said pre-decoder, wherein the encoded data for the plurality of

vertical lines contained in each macroblock row in said first buffer and said second buffer is a copy of the encoded data for the plurality of vertical lines contained in a corresponding macroblock row in the first encoded bitstream; and

(D) generating a second encoded bitstream using said pre-decoder, said second encoded bitstream comprising (i) said first field header, (ii) said macroblock rows containing the encoded data for the plurality of vertical lines from said first field of the frame picture, (iii) said second field header and (iv) said macroblock rows containing the encoded data for the plurality of vertical lines from said second field of the frame picture, wherein said second encoded bitstream is an intra-only field picture encoded bitstream; and

(E) presenting said second encoded bitstream to an input of a standard, MPEG-2 compliant decoder, wherein said second encoded bitstream is decoded as two interlaced field pictures.

2. (CURRENTLY AMENDED) The method according to claim 1, wherein said generating steps further comprise:

copying said frame header from said first encoded bitstream into a first field header portion of said first buffer to form said first field header and a second field header portion of said second buffer to form said second field header; and

modifying ~~(i)~~ a portion of said first field header  
~~portion~~ to indicate a top field picture; and ~~(ii)~~

10        modifying a portion of said second field header ~~portion~~  
to indicate a bottom field picture.

3.        (PREVIOUSLY PRESENTED) The method according to claim  
2, wherein said generating steps further comprise:

5        copying a plurality of said macroblock rows from said  
first bitstream to said first buffer and said second buffer,  
wherein said copying alternates between said first and said second  
buffers after each macroblock row.

4.        (CURRENTLY AMENDED) The method according to claim 3,  
wherein said generating steps further comprise:

5        adjusting a slice number of each macroblock row in said  
first buffer; and  
adjusting a slice number of each macroblock row in said  
second buffer to increment consecutively.

5.        (PREVIOUSLY PRESENTED) The method according to claim  
1, wherein step (D) further comprises:

5        writing (i) said first field header, (ii) said macroblock  
rows containing the encoded data for the plurality of vertical  
lines from said first field of the frame picture, (iii) said second

field header and (iv) said macroblock rows containing the encoded data for the plurality of vertical lines from said second field of the frame picture consecutively to said second encoded bitstream.

6. (PREVIOUSLY PRESENTED) The method according to claim 4, wherein step (D) comprises:

writing said first buffer followed by said second buffer to said second encoded bitstream.

7. (CANCELED).

8. (CANCELED).

9. (CURRENTLY AMENDED) The method according to claim 1, further comprising:

decoding said second encoded bitstream into a first decoded field picture and a second decoded field picture; and

5 presenting even field lines on a television monitor in response to said first decoded field picture and odd field lines on said television monitor in response to said second decoded field picture.

10. (CURRENTLY AMENDED) An apparatus comprising:

means for receiving a first encoded bitstream, wherein  
said first encoded bitstream is an intra-only frame picture encoded  
bitstream comprising a frame header and alternating macroblock  
rows, with each macroblock row containing encoded data for a  
5 plurality of vertical lines from a single respective field;

means for generating a first field header and a second  
field header ~~in response to~~ using said frame header of said first  
encoded bitstream, wherein said first field header comprises a copy  
10 of said frame header modified to signal a first field picture and  
said second field header comprises a copy of said frame header  
modified to signal a second field picture;

means for storing said first field header and macroblock  
rows containing the encoded data for the plurality of vertical  
15 lines from a first field of the frame picture in a first buffer and  
storing said second field header and macroblock rows containing the  
encoded data for the plurality of vertical lines from a second  
field of the frame picture in a second buffer, wherein the encoded  
data for the plurality of vertical lines contained in each  
20 macroblock row in said first buffer and said second buffer is a  
copy of the encoded data for the plurality of vertical lines  
contained in a corresponding macroblock row in the first encoded  
bitstream; and

means for generating a second encoded bitstream

25 comprising (i) said first field header, (ii) said macroblock rows  
containing the encoded data for the plurality of vertical lines  
from said first field of the frame picture, (iii) said second field  
header and (iv) said macroblock rows containing the encoded data  
for the plurality of vertical lines from said second field of the  
30 frame picture, wherein said second encoded bitstream is an intra-  
only field picture encoded bitstream; and

means for decoding said second encoded bitstream as two  
interlaced field pictures comprising a standard, MPEG-2 compliant  
decoder.

11. (CURRENTLY AMENDED) An apparatus comprising:

a first circuit configured to

(i) receive a first encoded bitstream, wherein said  
first encoded bitstream is an intra-only frame picture encoded  
5 bitstream comprising a frame header and alternating macroblock  
rows, with each macroblock row containing encoded data for a  
plurality of vertical lines from a single respective field,

(ii) generate a first field header and a second  
field header ~~in response to~~ using said frame header of said first  
10 encoded bitstream, wherein said first field header comprises a copy  
of said frame header modified to signal a first field picture and  
said second field header comprises a copy of said frame header  
modified to signal a second field picture;

(iii) store said first field header and macroblock  
15 rows containing the encoded data for the plurality of vertical  
lines from a first field of the frame picture in a first ~~field~~  
buffer and store said second field header and macroblock rows  
containing the encoded data for the plurality of vertical lines  
from a second field of the frame picture in a second ~~field~~ buffer,  
20 wherein the encoded data for the plurality of vertical lines  
contained in each macroblock row in the first buffer and the second  
buffer is a copy of the encoded data for the plurality of vertical  
lines contained in a corresponding macroblock row in the first  
encoded bitstream, and

25 (iv) generate a second encoded bitstream comprising  
(a) said first field header, (b) said macroblock rows containing  
the encoded data for the plurality of vertical lines from said  
first field of the frame picture, (c) said second field header and  
(d) said macroblock rows containing the encoded data for the  
30 plurality of vertical lines from said second field of the frame  
picture, wherein said second encoded bitstream is an intra-only  
field picture encoded bitstream; and

a second circuit configured to decode said second encoded  
bitstream as two interlaced field pictures, wherein said second  
35 circuit comprises a standard, MPEG-2 compliant decoder.

12. (CURRENTLY AMENDED) The apparatus according to claim 11, wherein said first circuit comprises:

one or more memory devices containing said first ~~field~~ buffer and said second ~~field~~ buffer;

5 an output circuit coupled to said one or more memory devices and generating said second encoded bitstream; and

a transform circuit coupled to said one or more memory devices and said output circuit, and configured to (i) copy said frame header from said first encoded bitstream into a first field header portion of said first ~~field~~ buffer to form said first field header and a second field header portion of said second ~~field~~ buffer to form said second field header.

13. (CURRENTLY AMENDED) The apparatus according to claim 12, wherein said transform circuit is further configured to:

modify (i) a portion of said first field header ~~portion~~ to indicate a top field picture and (ii) a portion of said second field header ~~portion~~ to indicate a bottom field picture.

14. (CURRENTLY AMENDED) The apparatus according to claim 12, wherein said transform circuit is further configured to:

copy a plurality of said macroblock rows from said first encoded bitstream to said first ~~field~~ buffer and said second ~~field~~ buffer, wherein said copying alternates between said first buffer



and said second ~~field buffers~~ buffer after each macroblock row is copied.

15. (CURRENTLY AMENDED) The apparatus according to claim 14, wherein said transform circuit is further configured to:

adjust a slice number of each macroblock row in said first ~~field~~ buffer to increment consecutively and adjust a slice number of each macroblock row in said second ~~field~~ buffer to increment consecutively.

16. (CURRENTLY AMENDED) The apparatus according to claim 12, wherein said transform circuit is further configured to:

write the contents of said first ~~field~~ buffer and the contents of said second ~~field~~ buffer consecutively to said second encoded bitstream.

17. (CANCELED).

18. (CANCELED).

19. (CURRENTLY AMENDED) The apparatus according to claim 11, wherein said second circuit is further configured to:

decode said second encoded bitstream into a first decoded field picture and a second decoded field picture; and

present even field lines on a television monitor in response to said first decoded field picture and odd field lines on said television monitor in response to said second decoded field picture.

20. (PREVIOUSLY PRESENTED) The apparatus according to claim 11, wherein said first encoded bitstream is an intra-only MPEG-2 frame picture stream and said second encoded bitstream is an intra-only MPEG-2 field picture stream.

21. (PREVIOUSLY PRESENTED) The apparatus according to claim 16, wherein said transform circuit is further configured to:  
write sequence-related information from said first encoded bitstream directly to said second encoded bitstream.

22. (PREVIOUSLY PRESENTED) The apparatus according to claim 21, wherein said transform circuit modifies one or more portions of sequence-related headers from said first encoded bitstream prior to output in said second encoded bitstream.

23. (NEW) The apparatus according to claim 11, wherein the encoded data for the plurality of vertical lines contained in each macroblock row remains encoded from reception by said first circuit through presentation to said second circuit.

24. (NEW) The method according to claim 1, wherein the encoded data for the plurality of vertical lines contained in each macroblock row remains undecoded from reception of said first encoded bitstream at said input of said pre-decoder through presentation of said second encoded bitstream to said input of said standard, MPEG-2 compliant decoder.

25. (NEW) The method according to claim 1, wherein a picture coding extension portion of said first field header is modified to signal a top field and a picture coding extension portion of said second field header is modified to signal a bottom field.